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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,672	02/21/2001	Makoto Oyanagi	Q62837	6037

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EXAMINER

THOMPSON, JAMES A

ART UNIT PAPER NUMBER

2625

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/788,672

Applicant(s)

OYANAGI ET AL.

Examiner

James A. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07 June 2006 has been entered.

Response to Arguments

2. Applicant's arguments filed 07 June 2006 have been fully considered but they are not persuasive. Applicant's present amendments to the claims and newly added claims have been fully considered by Examiner. Examiner agrees with Applicant that the present amendments to independent claims 23 and 31 overcome the previously applied combination of prior art references, namely Chen (US Patent 5,684,934) and Sakurai (US Patent 5,924,802), as set forth in the previous office action, dated 01 March 2006 and mailed 07 March 2006. However, additional prior art which was cited in item 10 of said previous office action as prior art that was relevant but not relied upon is now relied upon to demonstrate that the presently amended claims are obvious to one of ordinary skill in the art at the time of the invention. New prior art rejections based on Chen, Sakurai, and the newly relied upon reference Ikoma (US Patent 5,056,018) are set forth in detail below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 23-24, 26, 28, 31-32, 34, 36 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US Patent 5,684,934) in view of Ikoma (US Patent 5,056,018) and Sakurai (US Patent 5,924,802).

Regarding claims 23 and 31: Chen discloses a printer (figures 1-3 and column 2, lines 33-36 of Chen) comprising:

- a detector (figure 2(7) of Chen) configured to detect a printing error (column 3, lines 19-23 of Chen).
- an interface (figure 3(MO:DCA DATASTREAM) of Chen) configured to receive printing data (column 2, lines 60-64 of Chen). Since the print system manager (figure 3(2) of Chen) receives a datastream of print data (column 2, lines 60-64 of Chen), an interface is inherent since there would otherwise be no means by which the datastream could be input into said print system manager.
- a data buffer (figure 3(2) of Chen) configured to temporarily store the printing data received from a computer (column 2, lines 60-64 and column 3, lines 1-5 of Chen).
- a clearer (figure 3(37) of Chen) configured to clear the data buffer if the detector detects the printing error (column 3, lines 24-32 of Chen) after a transmission of the

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printing data has started (column 3, lines 16-23 of Chen), and not to clear the data buffer if the detector detects the printing error when the transmission of the printing data has not started (column 4, lines 8-15 of Chen). If an error is detected, the location of the error within the print stream (column 3, lines 16-23 of Chen) is used in print recovery (column 3, lines 24-32 of Chen). Part of the error signal includes the location at which the error occurred (column 4, lines 8-15 of Chen). Thus, if no printing data has been transmitted, then there is no data to clear in the data buffer.

Chen does not disclose expressly that said printing error is specifically that a printer cable is unplugged, the printer cable adapted to connect to a computer; and that the detector is upstream of the data buffer.

Ikoma discloses a detector (figure 2(34) of Ikoma), which is used to determine if a cable of a printer is unplugged (column 3, lines 21-34 of Ikoma), which is upstream of the data buffer (as clearly seen in figure 2 of Ikoma - data buffer is figure 2(38) of Ikoma).

Chen and Ikoma are combinable because they are from the same field of endeavor, namely the control and processing of printer data under conditions of printer error. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to set the detector upstream of the data buffer, specifically where the potential disconnect is located, as taught by Ikoma. The suggestion for doing so would have been that disconnection detection would clearly be better implemented if the detector is set next to the cable whose disconnection is to be detected, since such a position for the detector would

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place the detector in direct (or at least very close) contact with said cable. Therefore, it would have been obvious to combine Ikoma with Chen.

Chen in view of Ikoma does not disclose expressly that said printing error is specifically that a printer cable is unplugged, the printer cable adapted to connect to a computer.

Sakurai discloses determining a printing error if a printer cable is unplugged, the printer cable adapted to connect to a computer (figure 5 (S105) and column 6, lines 5-10 of Sakurai).

Chen in view of Ikoma is combinable with Sakurai because they are from the same field of endeavor, namely the control and processing of printer data under conditions of printer error. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the printer error taught by Chen be specifically that a printer cable, which is connected to a computer, is unplugged, as taught by Sakurai. The suggestion for doing so would have been that an unplugged printer cable is clearly an error condition since a printer cannot properly receive the print data from the host computer if there is no printer cable connection. Therefore, it would have been obvious to combine Sakurai with Chen in view of Ikoma to obtain the invention as specified in claims 23 and 31.

Further regarding claim 31: The printer of claim 23 performs the method of claim 31.

Regarding claims 24 and 32: Chen discloses an initializer (figure 1(3) of Chen) configured to initialize the interface for receiving the printing data when clearing the buffer (column 3, lines 23-32 of Chen).

Regarding claims 26 and 34: Chen discloses a print start detector (figure 3(2(bi-directional communication)) of Chen)

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configured to detect a start of the transmission of the printing data in accordance with a start signal which is received from the computer (column 3, lines 1-7 of Chen). The print start detector corresponds to the portion of the print system manager which maintains bi-directional communication with the printer controller, and maintains the Pending Page Queue and Printer Queue (column 3, lines 1-7 of Chen).

Regarding claims 28 and 36: Chen in view of Ikoma does not disclose expressly that the start signal is a device ID request which the computer transmits for confirming the model of the printer.

Sakurai discloses that the start signal is a device ID request which the computer transmits for confirming the model of the printer (column 4, lines 4-13 of Sakurai).

Chen in view of Ikoma is combinable with Sakurai because they are from the same field of endeavor, namely the control and processing of printer data under conditions of printer error. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a device ID request for the start signal, as taught by Sakurai. The motivation for doing so would have been to be able to print images in accordance with the type of options (column 4, lines 10-13 of Sakurai), such as automatic document feeding, double-sided printer, and others (column 3, lines 33-41 of Sakurai). Therefore, it would have been obvious to combine Sakurai with Chen in view of Ikoma to obtain the invention as specified in claims 28 and 36.

Further regarding claim 39: Ikoma discloses that the detector (figure 2(34) of Ikoma) is spatially positioned in an

upstream direction of the data buffer (as can clearly be seen in figure 2 of Ikoma).

Further regarding claim 40: Ikoma discloses that a detector (figure 2(34) of Ikoma) detecting that the cable is unplugged (column 3, lines 21-34 of Ikoma) is positioned spatially upstream with respect to the data buffer (as can clearly be seen in figure 2 of Ikoma).

5. Claims 25 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US Patent 5,684,934) in view of Ikoma (US Patent 5,056,018), Sakurai (US Patent 5,924,802) and Oami (US Patent 5,413,419).

Regarding claims 25 and 33: Chen discloses clearing the data buffer when printing is stopped (column 3, lines 28-32 of Chen).

Chen in view of Ikoma and Sakurai does not disclose expressly an ejector configured to eject paper stopped in printing operation when clearing the data buffer.

Oami discloses an ejector configured to eject paper when clearing the data buffer (figure 5(540,543) and column 9, lines 41-48 of Oami).

Chen in view of Ikoma and Sakurai is combinable with Oami because they are from the same field of endeavor, namely the control and processing of printer data under conditions of printer error. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to eject the paper when the data buffer is cleared, as taught by Oami, said data buffer being cleared when the printing is stopped, as taught by Chen. The motivation for doing so would have been that the data stored in the data buffer is no longer needed,

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thus it is more efficient in terms of memory to store only what is needed to recover from a printing error (column 3, lines 38-47 of Oami). Therefore, it would have been obvious to combine Oami with Chen in view of Ikoma and Sakurai to obtain the invention as specified in claims 25 and 33.

6. Claims 27 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US Patent 5,684,934) in view of Ikoma (US Patent 5,056,018), Sakurai (US Patent 5,924,802) and Wheeler (US Patent 4,404,433).

Regarding claims 27 and 35: Chen in view of Ikoma and Sakurai does not disclose expressly that the detector monitors a voltage of a power bus of the printer cable, and judges that the printer cable is unplugged when the voltage is not detected.

Wheeler discloses a detector that monitors a voltage of a power bus of the cable of an apparatus, and judges that the cable of the apparatus is unplugged when the voltage is not detected (column 5, lines 52-61 of Wheeler).

Chen in view of Ikoma and Sakurai is combinable with Wheeler because they are from similar problem solving areas, namely detecting faults and unplugged cable connectors for information processing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to detect the power, and thus voltage, of an apparatus connection in order to determine if the apparatus is unplugged, as taught by Wheeler, wherein the apparatus is specifically the printer connected by a printer cable taught by Chen. The motivation for doing so would have been to ascertain the status of the apparatus (column 5, lines 54-58 of Wheeler), which is important in determining error conditions in the printer taught

by Chen (column 3, lines 19-23 of Chen). In both Wheeler and Chen, if there is a system error, it is desirable that said error be reported so that said error can be corrected. By detecting the power of an apparatus connection, as taught by Wheeler, the error detection can be performed automatically, such as generally considered desirable in Chen (e.g. column 4, lines 5-15 of Chen). Therefore, it would have been obvious to combine Wheeler with Chen in view of Ikoma and Sakurai to obtain the invention as specified in claims 27 and 35.

7. Claims 29 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US Patent 5,684,934) in view of Ikoma (US Patent 5,056,018), Sakurai (US Patent 5,924,802) and Takeoka (US Patent 6,665,082 B1).

Regarding claims 29 and 37: Chen in view of Ikoma and Sakurai does not disclose expressly that the print start signal is a predetermined string which the computer transmits before a start of the transmission of the printing data.

Takeoka discloses that the print start signal is a predetermined string (figure 2(25C) and column 10, lines 15-21 of Takeoka) which the computer transmits before a start of the transmission of the printing data (column 6, lines 60-67 of Takeoka). The device ID data is part of the data that is transmitted (column 10, lines 15-21 of Takeoka) and is transmitted as part of the cycle-start packet, which is transmitted first (column 6, lines 60-67 of Takeoka), and therefore before the transmission of the printing data.

Chen in view of Ikoma and Sakurai is combinable with Takeoka because they are from the same field of endeavor, namely the control of printers and printing data. At the time of the

invention, it would have been obvious to a person of ordinary skill in the art to specifically transmit a predetermined string before the start of the transmission of the printing data, as taught by Takeoka. The motivation for doing so would have been to identify the printing data as such, so that the printing data is not lost while the printer performs printing-related preparations (column 5, lines 8-12 and lines 23-30 of Takeoka). Therefore, it would have been obvious to combine Takeoka with Chen in view of Ikoma and Sakurai to obtain the invention as specified in claims 29 and 37.

8. Claims 30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US Patent 5,684,934) in view of Ikoma (US Patent 5,056,018), Sakurai (US Patent 5,924,802) and Ryu (US Patent 5,978,921).

Regarding claims 30 and 38: Chen discloses that the data buffer clearing is performed automatically based on the detected errors (column 4, lines 5-15 of Chen). Since user interference does not play a role in the data buffer clearing, the printer does not have a control panel for the user to operate for clearing the printing data stored in the data buffer.

Chen in view of Ikoma and Sakurai does not disclose expressly that the printer does not have a power switch for a user to turn ON/OFF a power supply.

Ryu discloses the control of the power of a peripheral device by the computer system (figures 7A-7B and column 6, lines 30-34 of Ryu), and therefore by computer software embodied in said computer system.

Chen in view of Ikoma and Sakurai is combinable with Ryu because they are from the same field of endeavor, namely the

control of computer peripheral devices. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use software to control the power of the peripheral, as taught by Ryu, said peripheral being the printer taught by Chen in view of Ikoma and Sakurai. Since software is used to control the power of the printer, and not a power switch, then the printer would not have a power switch for a user to turn ON/OFF a power supply. The motivation for doing so would have been to save electrical power when a peripheral device is not in use (column 1, lines 13-18 of Ryu). Therefore, it would have been obvious to combine Ryu with Chen in view of Ikoma and Sakurai to obtain the invention as specified in claims 30 and 38.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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29 August 2006

James A. Thompson
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